

EDUCATION

- 2017 **Master of Science, Electrical Engineering**
University of South Carolina, Columbia, SC
- 2011 **Bachelor of Science, Electrical Engineering**
The Citadel, The Military College of South Carolina, Charleston, SC

EXPERIENCE

- June 2025
to Present **Engineering Design & Testing Corp.**
Columbia, SC
Consulting Engineer
Consulting in the fields of electrical and control systems engineering for residential, commercial, and industrial installations. Investigation into the cause and scope of damage to electrical and control systems. Evaluation of electrical and control system code compliance and construction defects. Technical investigations of incidents involving commercial and industrial power, automation, and control systems. Analysis of project management, scope of damage, and costs to repair or replace electrical equipment and control systems.
- April 2018
to June 2025 **Applied Control Technologies, Inc.**
Columbia, SC
Systems Engineer
Consulted for clients in chemical, mining, pharmaceutical, power, pulp and paper, and recycling sectors. Designed safety and control systems, upgraded electrical infrastructure, and worked closely with electricians to ensure that construction was executed safely and in compliance with local regulations. Experienced in troubleshooting malfunctions in large, complex, multidisciplinary systems. Design, analysis, and modification of programmable logic controllers (PLC), human machine interface (HMI), distributed control system (DCS), and safety logic solvers (SLS). Work included supervision and training of junior engineers, resource and budget management, and client customer service.
- June 2011
to March 2018 **Albemarle Corporation (Acquired by SI Group, Inc. in September 2014)**
Orangeburg, SC
Electrical, Instrumentation, and Controls Engineer
Responsible for equipment and process reliability for cGMP, wastewater, utilities, and chemical processing operations at the production facility. Designed instrumentation strategies for various chemical processes. Guided the electrical staff in troubleshooting performance and maintenance problems. Designed and maintained a wide variety control systems for highly hazardous chemicals along with their supporting electrical infrastructure. Served as a subject matter expert in process hazard analyses (PHA) and layers of protection analyses (LOPA) for new and existing chemical operations. Led incident investigations for chemical exposure and equipment failure. Lead engineer implementing statistical process control (SPC) to optimize processes.

REGISTRATIONS and CERTIFICATIONS

Registered Professional Engineer, Alabama, PE55904
Registered Professional Engineer, Georgia, PE054457
Registered Professional Engineer, Kentucky, 41188
Registered Professional Engineer, Louisiana, PE.0050448
Registered Professional Engineer, Florida, 102208
Registered Professional Engineer, Mississippi, 36536
Registered Professional Engineer, North Carolina, 047220
Registered Professional Engineer, South Carolina, 35089
Registered Professional Engineer, Tennessee, 132776
Registered Professional Engineer, Virginia, 0402070551
Registered Professional Engineer, West Virginia, 27531
National Council of Examiners for Engineers and Surveying Record, 12-727-12

PROFESSIONAL ORGANIZATIONS

International Association of Arson Investigators (IAAI)
Institute of Electrical and Electronics Engineers (IEEE)
International Society of Automation (ISA)
National Association of Fire Investigators (NAFI)
Inter-National Electrical Testing Association (NETA)
National Fire Protection Association (NFPA)

PUBLICATIONS

J. Weddington, G.Niu, R. Chen, W. Yan, B. Zhang, "Lithium-ion battery diagnostics and prognostics enhanced with Dempster-Shafer decision fusion", *Neurocomputing*, vol. 458, pp. 440-453, Oct. 2021, doi: 10.1016/j.neucom.2021.06.057.

W. Yan, B. Zhang, G. Zhao, J. Weddington and G. Niu, "Uncertainty Management in Lebesgue-Sampling-Based Diagnosis and Prognosis for Lithium-Ion Battery," in *IEEE Transactions on Industrial Electronics*, vol. 64, no. 10, pp. 8158-8166, Oct. 2017, doi: 10.1109/TIE.2017.2701790.

PRESENTATIONS

Weddington, J., W. Yan, W. Dou, and B. Zhang. "Battery Capacity Anomaly Detection and Data Fusion". *Annual Conference of the PHM Society*, vol. 7, no. 1, Oct. 2015. (San Diego, CA)

CONTINUING EDUCATION

2025 "CBT 101: Introduction to SEL Relays", Schweitzer Engineering Laboratories, Inc.
 "CBT 102: Retrieving Event Reports", Schweitzer Engineering Laboratories, Inc.

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- “CBT 104: Understanding SEL Relay Logic”, Schweitzer Engineering Laboratories, Inc.
- “CBT 105: Math Fundamentals”, Schweitzer Engineering Laboratories, Inc.
- 2024 “Arc Flash Resistant Equipment (E02-019)”, CED Engineering
- “Introduction to Protective Device Coordination Analysis (E04-030)”, CED Engineering
- “Electrical Engineering Fundamentals: Motors, Generators & Power Distribution (E08-003)”, CED Engineering
- 2023 “Introduction to Transformers (E05-013)”, CED Engineering
- “Improving Motor and Drive System Performance (E06-006)”, CED Engineering
- “Radar Fundamentals (E05-014)”, CED Engineering
- 2022 “2020 NEC: Definitions and Article 517”, American Electrical Institute
- “2020 NEC Code Change Final Exam”, American Electrical Institute
- 2021 “Project Management for Engineers”, PDH 365
- 2020 “NFPA 70E: Standard for Electrical Safety in the Workplace 2017-2018”, 360training® Inc.
- “I1004 Process Control”, PDH Direct
- “P2036 Engineering Symbolology, Prints, And Drawings”, PDH Direct
- “H1007 A Toolbox of Engineering Countermeasures to Reduce Red Light Running”, PDH Direct
- “P2001 Air Conditioning Systems”, Zook
- 2019 “FE Standard Setting Workshop”, National Council of Examiners for Engineering and Surveying (NCEES)
- “RF100 The Plain English Guide to the Clean Air Act Final Exam”, PDH Direct
- 2018 “Arc Quenching Switchgear NEC 240.87”, Eaton
- “Solving the Complexity of Selecting, Sizing and Troubleshooting Rupture Disks”, Zook
- “SEL Protection Seminar”, Schweitzer Engineering Laboratories, Inc.
- “OSHA 10 Hour Outreach Training Program - General Industry”, 360training® Inc.
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